PROJECT DESCRIPTION

I. General

This portion of the project involves the phased reconstruction of an existing traffic control signal with traffic signal interconnect in conjunction with geometric improvements at the intersection of MD 5(Branch Ave) and MD 637 (Naylor Road) in Prince George's County, Maryland. MD 5 is assumed to run in a north / south direction.

II. Intersection Operation

No change to the existing intersection operation is necessary for this project.

This intersection shall operate in a NEMA two (2) phase semi-actuated mode with the northbound MD 5 left turns and southbound MD 5 through lanes operating in exclusive phases each. Northbound MD 5 through lanes and east bound MD 637 are uneffected by the traffic signal.

An eight phase fully-actuated controller with a system package and one (1) four channel rack mounted loop detector amplifiers house in a base mounted cabinet shall be installed at this intersection.

III. Special Notes

1.) Maintenance of traffic will be handled by the contractor utilizing the following standard plates for traffic control: 104.00 - 104.00-30, 104.32-02, 104.33-02, 104.38-02, 104.39-02, 104.40-02, 104.41-02, 104.44-02, 104.45-02, 104.48-02.

2.) The following are SHA District 3 Contact persons:

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations
Division (410) 787-7630

Mr. Charles Watkins
District Engineer
(301) 513-7311

Mr. Majib Shakib
Asst. District Engineer - Traffic
(301) 513-7358

Mr. Randy Brown
Asst. District Engineer - Maintenance
(301) 513-7304

Mr. Augustine Rebish
District Engineer- Utility
(301) 513-7350

3). The contractor shall be responsible for routing all cables into the base of the controller cabinet and properly tag / label each cable. Maryland SHA forces shall be responsible for internal wiring.

CONSTRUCTION DETAILS

A. Install a 27 ft. steel pole with a 60 ft. mast arm, signal head, and a 20 ft. lighting arm with a 250 watt HPS lamp and luminaire at station 27+91: left 15 ft. (Note: One - 2 in. PVC schedule 80 conduit bend and four - 2 in. x 90 in. anchor bolts. Also, the contractor shall not install the mast arm until the final phase of construction. Refer to the ultimate traffic signal plan for this intersection for the mast arm orientation).

B. Install a 12 in. x 30 ft. steel strain pole, controller and cabinet, control and distribution equipment, and a 20 ft. lighting arm with a 250 watt HPS lamp and luminaire at station 28+52: right 66 ft. (Note: One - 2 in. PVC schedule 80 electrical conduit bend and four - 1-3/4 in. x 90 in. anchor bolts).

C. Install an electrical handhole at station 28+21: left 15.5 ft.

D. Install an electrical handhole.

E. Install a 6 ft. x 30 ft. quadruple vehicle loop detector (3-6-3) turns encased in flexible tubing.

F. Install a 1 in. liquid tight, flexible, non-metallic conduit for detector wire sleeve.

G. Install a 3/8 in. steel span wire and signal heads as shown.

H. Install a ground mounted sign.

I. Deleted.

J. Install a 2 in. PVC schedule 80 electrical conduit - trenched.

K. Install a ground mounted sign on wooden skid sign support.

L. Remove existing pavement marking - any width.

M. Remove, salvage, and deliver existing controller and cabinet.

N. Install a 24 in. white, reflective, thermoplastic pavement marking.

O. Use existing handhole.

P. Relocate signal heads as shown.

Q. Relocate ground mounted sign.

CONSTRUCTION DETAILS

ULTIMATE SIGNAL

A. Install base mounted controller and cabinet (size 6) with control and distribution equipment at station 27+10.5: right 60 ft. (Note: two - 4 in. PVC schedule 80 conduit bends and two - 2 in. PVC schedule 80 conduit bends).

B. Install a 4 in. PVC schedule 80 electrical conduit - trenched.

C. Install electrical handhole.

D. Install a 3 in. PVC schedule 80 electrical conduit - slotted prior to the final roadway surface course.

E. Use existing handhole.

F. Use existing conduit.

G. Install the 60 ft. mast arm and signal heads as shown.

H. Remove and dispose of the existing steel span wire and signal heads.

I. Deleted.

J. Remove and dispose of existing steel strain pole and foundation, and remove, salvage and deliver the existing pole mounted traffic signal controller and cabinet to the MD-SHA.

K. Maintain existing vehicle loop detector. (Note: splice to new 2 conductor aluminum shielded cable).

L. Install a 3 in. PVC schedule 80 electrical conduit - slotted prior to the installation of the final roadway surface course.

M. Install 24 in. white, reflective, thermoplastic pavement marking.

EQUIPMENT LIST

A. Equipment to be supplied by the Administration

Item No.	Quantity	Units	Specification Section	Description
	4	EA	814	12 in. 1 way 3 section (R.Y.G) polycarbonate signal head - span mount.
	1	EA	814	12 in. 1 way 3 section (RA.YA.GA) optically programmed signal head - pole mount.
	4	EA	814	12 in. 1 way 3-section (R.Y.G) signal head mast arm mount.
	1	EA	816	Eight-phase (fully actuated) controller and cabinet - pole mount
	1	EA	816	Eight-phase (fully actuated) controller and cabinet - base mount
	2	EA	816	four channel rack mounted loop detector amplifier(delayed output)
	23	SF	813	Sheet aluminum signs consisting of:
	2	EA	xxx	Guide shield assembly (30 in. x 51 in.)ground mount
	1	EA	xxx	R1-2 (36" x 36" x 36") ground mount

B. Equipment to be furnished and/or installed by the Contractor.

Item No.	Quantity	Units	Specification Section	Description
	2	CY	205	Test pit excavation
	80	LF	555	24 in. white reflective thermoplastic pavement marking
	70	LF	555	Remove existing pavement marking - any width
	7	CY	801	Furnish and install concrete for signal foundation.
	2	EA	804	Furnish and install ground rod - 3/4 in. diameter x 10 ft.
	60	LF	805	Furnish and install 2 in. schedule 80 rigid PVC conduit - Trenched.
	20	LF	805	Furnish and install 1 in. liquid tight flexible non-metallic conduit for detector wire sleeve.
	2	EA	806	Furnish and install 250 Watt high pressure sodium lamp and luminaire with photo cell
	2	EA	807	Furnish and install control and distribution equipment.
	200	LF	810	Furnish and install electrical cable 1-conductor No. 4 AWG - THHN/THWN
	110	LF	810	Furnish and install electrical cable - 2 conductor (Aluminum shielded).
	60	LF	810	Furnish and install electrical cable - 5 conductor (No. 14 AWG).
	220	LF	810	Furnish and install electrical cable - 7 conductor (No. 14 AWG).
	1000	LF	810	Furnish and install loop wire encased in flexible tubing (No. 14 AWG).
	200	LF	810	Furnish and install 2 - conductor - Tray cable (No. 12 AWG).
	2	EA	811	Furnish and install electrical handhole.
	23	SF	813	Install ground mounted sign.
	5	EA	814	Install signal head - any type
	5	EA	814	Relocate exisiting signal head
	240	LF	815	Furnish and install saw cut for signal.
	1	EA	816	Install eight phase (fully actuated) controller and cabinet - pole mount.
	1	EA	816	Install eight phase (fully actuated) controller & cabinet base mount (size 6)
	1	EA	829	Furnish and install a 27 ft. steel pole with a single 60 ft. mast arm (Note: Four - 2 in. x 90 in. anchor bolts).
	160	LF	819	Furnish and install 3/8 in. steel span wire.
	2	EA	818	Furnish and install 20 ft lighting arm on signal structure.
	LS	LS	xxx	Delivery of salvaged traffic signal equipment
	LS	LS	xxx	Remove and salvage existing traffic signal equipment.
	LS	LS	xxx	Removal and disposal of traffic signal equipment. existing materials.

DYER CONSULTING ENGINEERS COLUMBIA, MARYLAND

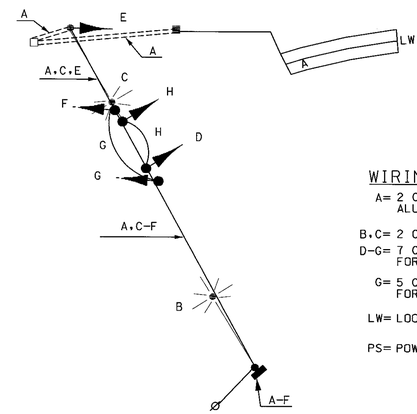
PHASING SEQUENCE CHART

	1	2	3	4	5	
PHASE 5	R	R	←G—	G	G	↰
PHASE 5 CHANGE	R	R	←Y—	Y	Y	
PHASE 6	G	G	←R—	R	R	→
PHASE 6 CHANGE	Y	Y	←R—	R	R	
FLASHING OPERATION	FL/Y	FL/Y	FL/←R—	FL/R	FL/R	↰ ┄→

R= RED
Y= YELLOW
G= GREEN
←Y— = YELLOW ARROW
←G— = GREEN ARROW
FL= FLASHING

WIRING DIAGRAM

TEMPORARY SIGNAL



WIRING KEY

A= 2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) ALUMINUM SHIELDED

B,C= 2 CONDUCTOR TRAY CABLE(NO. 12 AWG)

D-G= 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) FOR TRAFFIC SIGNAL HEAD

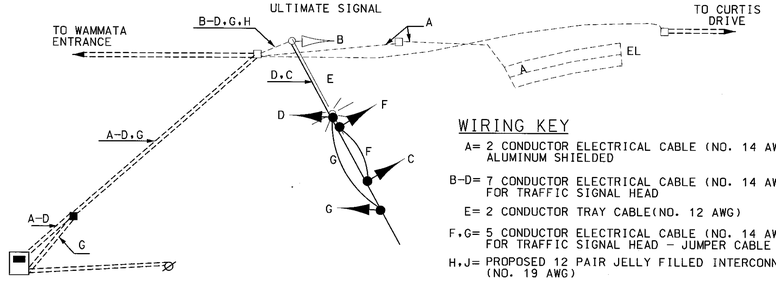
G= 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) FOR TRAFFIC SIGNAL HEAD - JUMPER CABLE

LW= LOOP WIRE

PS= POWER SERVICE

WIRING DIAGRAM

ULTIMATE SIGNAL



WIRING KEY

A= 2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) ALUMINUM SHIELDED

B-D= 7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) FOR TRAFFIC SIGNAL HEAD

E= 2 CONDUCTOR TRAY CABLE(NO. 12 AWG)

F,G= 5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG) FOR TRAFFIC SIGNAL HEAD - JUMPER CABLE

H,J= PROPOSED 12 PAIR JELLY FILLED INTERCONNECT CABLE (NO. 19 AWG)

EL= EXISTING LOOP

PS= POWER SERVICE

TEMPORARY SIGNAL & ULTIMATE

REVISIONS	APPROVALS
	ASST. DIVISION CHIEF, TEDD
	ASST. DISTRICT ENGINEER, TRAFFIC
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION
	DIRECTOR, OFFICE OF TRAFFIC & SAFETY

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION

MD 5 (BRANCH AVE) @ MD 637 (NAYLOR RD)
GENERAL INFORMATION SHEET 1 OF 1

LOGMILE #:
DATE 11/22/73

DRAWN BY: R. C.
CHECK BY: D. P.
SCALE: 8-28-78 NONE

F.A.P. NO.
S.H.A. NO. P-388-000-385
COUNTY PRINCE GEORGE'S

PLAN SHEET NO.: TS-1070D GI

SHEET NO. 109 OF 157